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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/994,746	11/28/2001	Hideki Yoshinaga	35.C15980	8349
5514	7590	01/10/2005	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			SHAPIRO, LEONID	
			ART UNIT	PAPER NUMBER
			2673	

DATE MAILED: 01/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/994,746

Applicant(s)

YOSHINAGA ET AL.

Examiner

Leonid Shapiro

Art Unit

2673

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 October 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) 2,4 and 6 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,7 and 8 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 November 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the newly introduced limitation of claim 1 "a weight factor" must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Correction of the following is required: The newly introduced limitation of claim 1 "a weight factor" is not shown in Specification.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is not clear how **constant** could be changed all the time depending on input signal for all pixels in a frame?

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1, 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over APA (Admitted Prior Art) in view of Kunzman (US Patent No. 6,392,717) and Agulnek et al. (US Patent No. 4,525,729).

As to claim 1, APA teaches a color liquid crystal display device (See Fig. 11, items 11-13, 20-23, page 2, lines 5-13) comprising:

a liquid crystal display part (See Fig. 11, item 22, page 2, lines 5-13);

light sources for irradiating the liquid crystal display part with lights of three primary colors, colors sequentially or simultaneously, the device displaying a frame picture by sequential fields of three primary color pictures and a field of a white picture in the liquid crystal display part (See Figs. 13, 16, items 20,22,Lc, pages 6-10);

a circuit determining a minimum value of brightness among three color signals in a pixel (See Fig. 13, item 14, in description See page 7, Lines 2-6); a circuit for subtracting the brightness value of each pixel in the white field from the inputted three primary color signals for respective primary color fields (See Fig. 13, items 17-19, in description See page 7, Lines 6-21):

a circuit for subtracting the minimum level from the level of brightness of the three primary color signals to create display signals for respective color fields (See fig. 13, items 17-19, pages 6-7).

APA does not show a circuit for determining a maximum among minimum levels of brightness of all pixels in a frame and multiplying a constant to the minimum levels of each pixel to create a display signal in the white field, the constant being determined by the maximum and weight factor of the white field relative to the primary color fields.

Kunzman teaches a circuit for determining a brightness level of a pixel in the white field as the minimum value modulated by proportion value (g) and for determining a maximum value (C_{max}) of the minimum value of each pixel in one frame (See Figs. 2, items Y-DETECT, 32, 36, 46, in description See Col. 4, Lines 1-52) and a circuit for setting the brightness of the light source in the white field as the maximum value (Y_{ws}) multiplied by the proportion value (Y_{ratio}) and for driving the light source while supplying the display signals of the respective fields of three primary colors and the white field (See Fig. 6, items 62, 64, 66, in description See Col. 10, Lines 2-45).

Since Kunzman mentioned that the system could have three colored light sources (See Col. 3, Lines 43-48), it would have been obvious to one ordinary skill in the art at the time of the invention to implement circuits for comparing brightness levels, circuits for setting proportion and light driving part as shown by Kunzman for color wheel in APA apparatus for three colored light sources in order to produce better image (See Col. 2, Line 39 in the Kunzman reference).

APA and Kunzman do not show a circuit for modulating the brightness of primary color light sources in the white field according to the constant.

Kunzman teaches the system could have three colored light sources (See Col. 3, Lines 43-48).

Agulnek et al. teaches to drive white linear LED array proportional to the value (see Col. 1, Lines 37-41).

It would have been obvious to one ordinary skill in the art at the time of the invention to incorporate teaching of Agulnek et al. into APA and Kunzman system in order to produce better image.

As to claim 8, Kunzman teaches a circuit for detecting a change of maximum brightness to determine the proportion value (Yratio), relationship between brightness in white and color field (Yws, CCr, CCb, CCg) (See Col. 10, Lines 2-45).

As to claim 7, APA and Kunzman do not show proportion value in the range of 0% to 100%.

It would have been obvious to one ordinary skill in the art at the time of invention to use this range for proportion value during calibration process (See Fig. 6, items 62, 64, 66, in description See Col. 10, Lines 2-45).

5. Claims 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA and Kunzman, Agulnek et al. as aforementioned in claim 1 in view of Yamazaki et al. (US Patent No. 6,597,348 B1).

As to claim 5, APA and Kunzman, Agulnek et al. do not show proportion value equal to 0% one frame is divided into three fields to perform display only by three-color fields

Yamazaki et al. teaches with proportion value equal to 0% one frame is divided into three fields to perform display only by three-color fields (See Fig. 3, items R,G,B, in description See Col. 4, Lines 64-68).

It would have been obvious to one ordinary skill in the art at the time of the invention to incorporate teaching of Yamazaki et al. into Agulnek et al., APA and Kunzman system in order to produce better image.

Response to Amendment

3. Applicant's arguments filed on 10.01.04 with respect to claims 1, 5.7-8 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

4. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter:

Relative to claim 3 the major difference between the teaching of the prior art of record (APA, Kunzman and Agulnek et al.) and the instant invention is that the said prior art **does not teach** the proportion value is automatically set depending on changes of displayed image information.

Telephone inquire

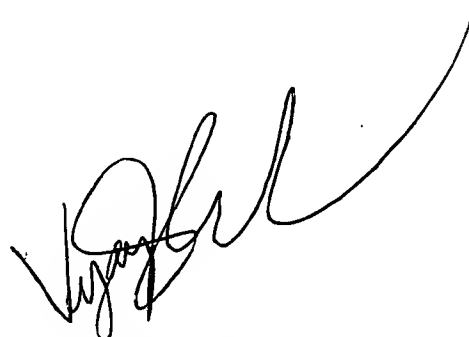
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid Shapiro whose telephone number is 703-305-5661. The examiner can normally be reached on 8 a.m. to 5 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bipin Shalwala can be reached on 703-305-4938. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Ls

01.03.05



VIJAY SHANKAR
PRIMARY EXAMINER